EFFORTLESS CONTROL

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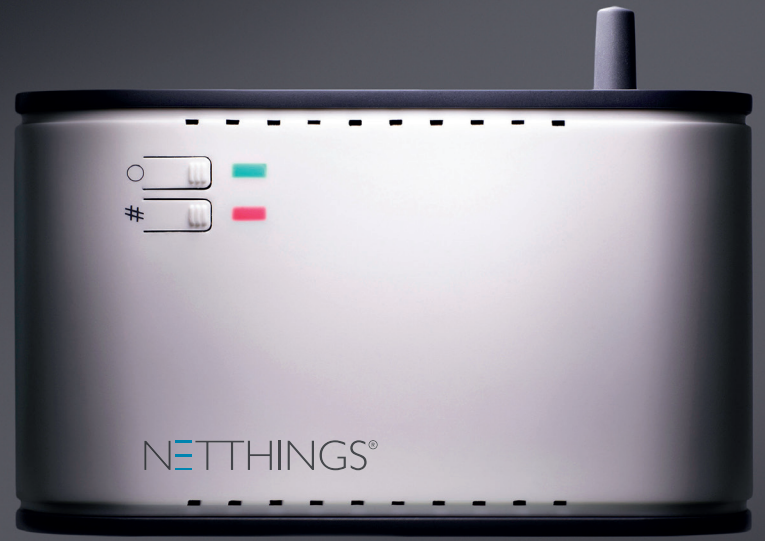
NETTHINGS®

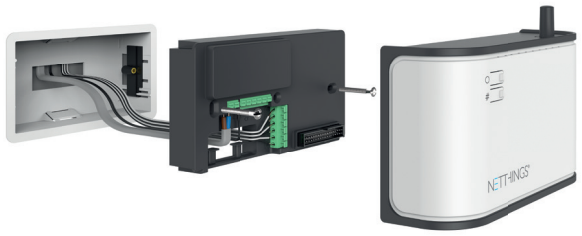


ENERGY MANAGER USER GUIDE

ENERGY MANAGER SPECIFICATIONS & USER GUIDE

A UNIQUE real-time energy monitoring system for all utility types including heat and water that is worth two code credits under the Code for Sustainable Homes.

For energy saving tips and advice plus troubleshooting on this energy monitor please refer to our website: www.netthings.co.uk/support



WELCOME TO YOUR NEW NETTHINGS ENERGY MANAGER WE HOPE YOU FIND IT VERY USEFUL IN KEEPING YOU UP TO DATE WITH YOUR HOUSEHOLD ENERGY SPEND.

TAKE SOME TIME TO GET FAMILIAR WITH THE PRODUCT AND LEARN ABOUT ITS DISPLAY FUNCTIONS AND HOW TO FURTHER TAILOR ITS SETTINGS TO PROVIDE YOU WITH A MORE ACCURATE REPRESENTATION OF YOUR ENERGY.

Energy Manager for the home is a sophisticated but low-cost, mains powered integrated energy, heat and water monitoring package that saves money by helping you reduce your energy consumption.

You should have already have spotted your display for the system in your property, scrolling through all of the monitored energy channels connected. This is the user interface for the connected utilities and will be your gateway to your energy consumption and spending information. Under normal conditions these will change every 5 seconds but can be made to display one page only.

There is a further piece to the NetThings system, the Hub, which is connected to the utilities and gathers the information you see on the display. The Hub (as shown above) does not need any user interaction during normal use but some facilities can be performed from the Hub which will be explained later in this guide and the Support section of our website. **www.netthings.co.uk/support**

The system works independent from your utility provider, they have no control over the device, however it uses the utility meters to calculate your energy consumption and calculate your spend.

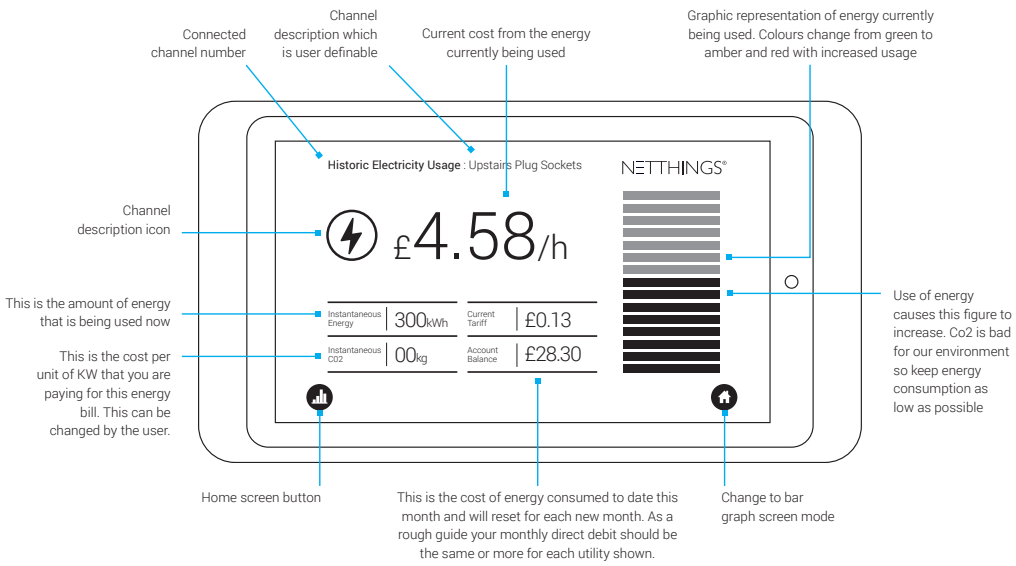
The Unit can be wired with up to six sensors for incoming mains electricity, gas and water supplies or to monitor the electrical output from solar PV systems, or the heat/cooling output from solar thermal systems or district heating schemes.

On-going energy consumption and costs are stored continually within the NetThings unit and can also be downloaded to a removable microSD card (not supplied). Built-in WiFi allows Energy Manager to communicate in real-time your energy usage and show this directly on the local display in the home. No connection to your existing broadband is required.

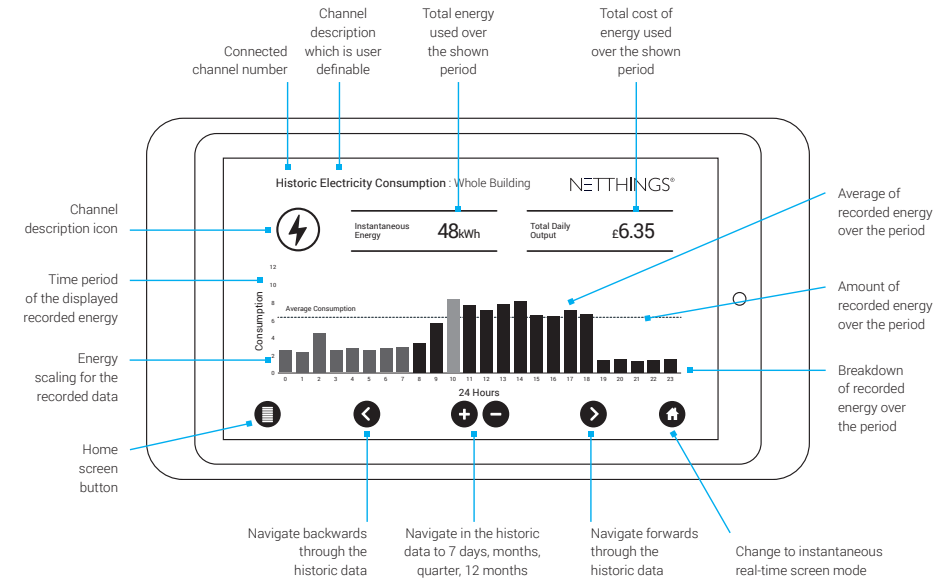
During the summer of 2015 NetThings will be launching their cloud service, where data will be viewable from anywhere in the world via an internet browser.

INFORMATION DESCRIPTIONS

There are two screens that will be shown for each connected channel the first shown below gives general information about your energy use.


Connected channel number
Channel description which is user definable
Current cost from the energy currently being used
Graphic representation of energy currently being used. Colours change from green to amber and red with increased usage
Historic Electricity Usage : Upstairs Plug Sockets
NETTHINGS®
£4.58/h
Instantaneous Energy 300kWh
Current Tariff £0.13
Instantaneous CO2 00kg
Account Balance £28.30
Channel description icon
This is the amount of energy that is being used now
This is the cost per unit of KW that you are paying for this energy bill. This can be changed by the user.
Use of energy causes this figure to increase. Co2 is bad for our environment so keep energy consumption as low as possible
Home screen button
This is the cost of energy consumed to date this month and will reset for each new month. As a rough guide your monthly direct debit should be the same or more for each utility shown.
Change to bar graph screen mode

The second screen, shown below gives a breakdown of historic energy consumption over time and this will be at default setting of the 24 hour period.

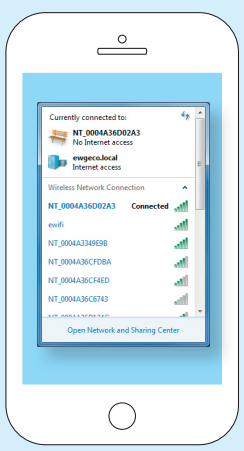

Connected channel number
Channel description which is user definable
Total energy used over the shown period
Total cost of energy used over the shown period
Historic Electricity Consumption : Whole Building
NETTHINGS®
Instantaneous Energy 48kWh
Total Daily Output £6.35
Average Consumption
Consumption
24 Hours
Channel description icon
Time period of the displayed recorded energy
Energy scaling for the recorded data
Home screen button
Average of recorded energy over the period
Amount of recorded energy over the period
Breakdown of recorded energy over the period
Navigate backwards through the historic data
Navigate in the historic data to 7 days, months, quarter, 12 months
Navigate forwards through the historic data
Change to instantaneous real-time screen mode

VIEWING ON YOUR MOBILE

You may wish to view the information on your PC or smartphone. To do this simply follow the next steps.

- Check the MAC address and password for your energy manager (This will be in your installation documentation or on the Energy Manager itself)
- Search for the WiFi signal from the Energy Manager on your PC or smartphone (this will be the MAC address prefixed with NT_*********)
- Log into the WiFi signal and enter the password
- Open your internet browser
- Enter this address in the address bar **172.16.0.254:3000**
- The Energy Manager's screens will appear

Note. Doing this will disconnect your PC/Smartphone usage of the internet and functionality will be limited to only the Energy Manager screens. Disconnect from the NetThings WiFi and reconnect to the household WiFi in order to gain your full working internet functions.

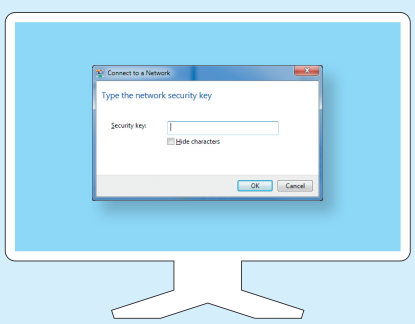


VIEWING ON YOUR DESKTOP

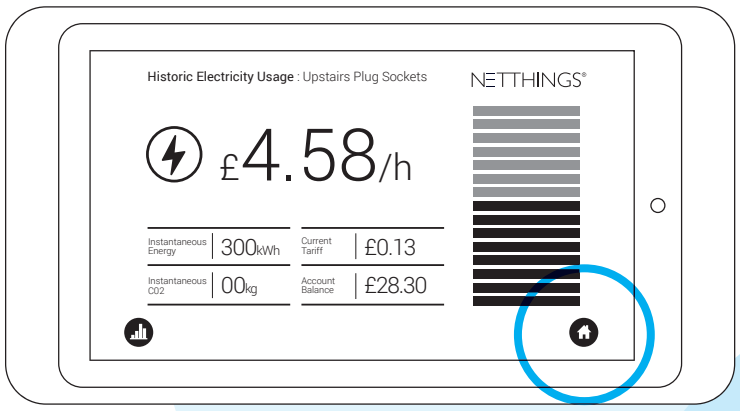
You may wish to view the information on your PC or smartphone. To do this simply follow the next steps.

- Press the 'Home' button (bottom left of the screens)
- Select The channel you wish to view i.e. Mains electricity
- The channel instantaneous information is displayed
- Press the bar graph symbol to access the historic data
- You can navigate to different days or weeks etc. from here

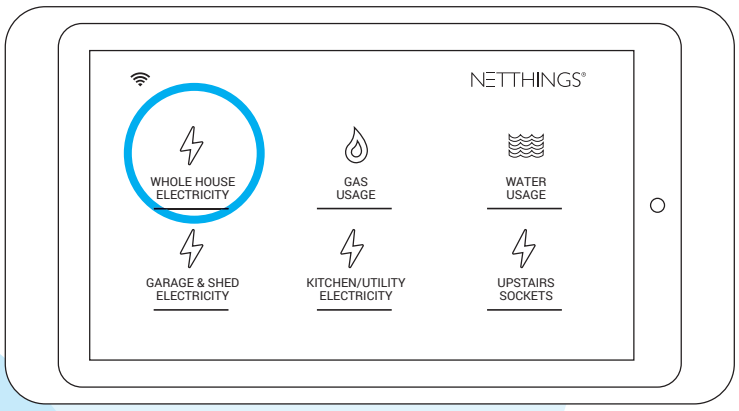
Note. The screen will be displayed indefinitely, you must press the home button to allow the system to start cycling the channels again. This will happen after 10 minutes of inactivity at the home screen.



DATE & TIME ARE **ALWAYS CORRECT** AND NEVER NEED TO BE ADJUSTED



TO LOOK AT
INDIVIDUAL PAGES



On any of the screens that are being displayed press the **'Home'** button (bottom left of the screens)

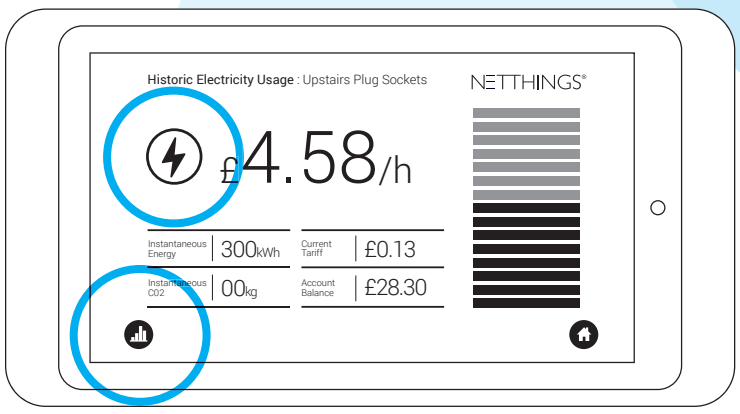
Select The channel you wish to view i.e. Mains electricity

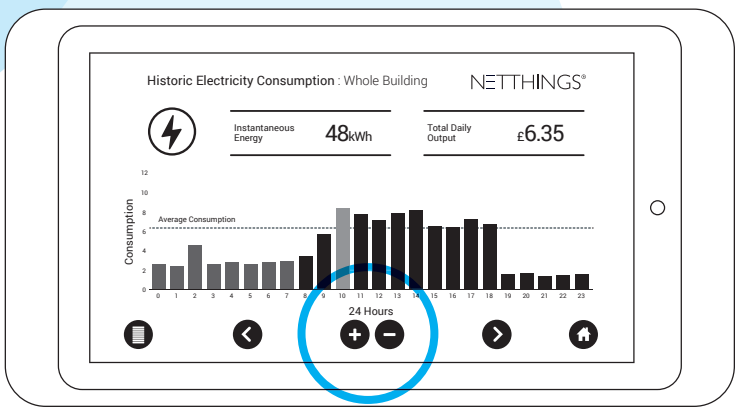
The channel instantaneous information is displayed

Press the bar graph symbol to access the historic data

You can navigate to different days or weeks etc. from here

Note. The screen will be displayed indefinitely, you must press the home button to allow the system to start cycling the channels again. This will happen after 10 minutes of inactivity at the home screen.

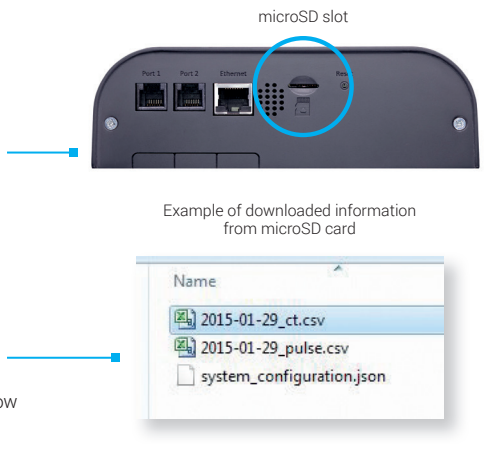




DATA DOWNLOAD FUNCTION

The stored data can be downloaded as a CSV file and viewed within your computer's spreadsheet application.

- You will need to have a microSD card for this function with a minimum size of 2Gb
- Insert the microSD into the card slot with contacts facing you into the under side of the Energy Manager
- A successful insertion will make the LED indicators flash **BLUE** three times then cycle
- **RED**, **YELLOW** & **GREEN** before finally giving three **GREEN** flashes indicating that it is now safe to remove the microSD card
- If the card isn't inserted correctly the LED will indicate **RED**. Simply re-insert the card successfully if this happens
- Once the data is downloaded insert this to your PC and open the CSV file (There is a separate file for CT input data and pulse data)
- Open the file with your spreadsheet program and view the data as below



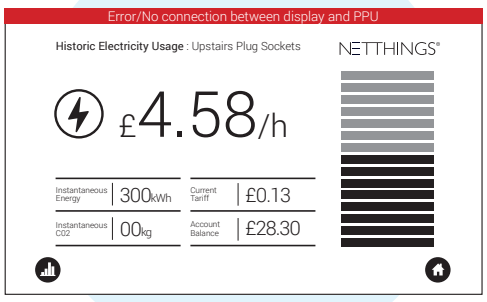
Example of downloaded information from microSD card

			CT 1 Gain	CT 2 Gain	CT 3 Gain				energy multiplier		
			1	1	1				0.00025		
Timestamp	Voltage	CT 1 I	CT 2 I	CT 3 I	Power 1	Power 2	Power 3	Energy 1	Energy 2	Energy 3
2015-01-29 00:13:04 +0000	247.669174	3.553222	0.265555	1.066678	880.0235578	65.7697875	264.1832592	0.220005889	0.016442447	0.066045815
2015-01-29 00:28:23 +0000	247.608688	3.793138	0.284041	1.165198	939.2139236	70.33101935	288.513148	0.234803481	0.017582755	0.072128287
2015-01-29 00:43:49 +0000	248.368744	3.78983	0.284092	1.163574	941.2753171	70.55957322	288.9954129	0.235318829	0.017639893	0.072248853
2015-01-29 00:59:04 +0000	246.086166	3.81824	0.284335	1.180763	939.6160425	69.97091001	290.5694396	0.234904011	0.017492728	0.07264236

SCREEN ERRORS

Should you see this error on the screen then there is a break in communication between the Energy Manager and the display. No new information will be received to the display until it is reconnected to the Energy Manager.

Simply use a paper clip to reset the display and if presented with the **'SELECT A WIFI'** page choose your energy managers NT code and reconnect. Should this fail to reconnect the display please check the NetThings website under SUPPORT for further guidance.



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FOR ENERGY SAVING TIPS AND ADVICE PLUS TROUBLESHOOTING ON THIS ENERGY MONITOR PLEASE REFER TO OUR WEBSITE:
WWW.NETTHINGS.CO.UK/SUPPORT

PRODUCT DATA

Name of Manufacturer	NetThings Limited
Unique reference number (model number)	NT01:00:00
Purpose of product (Energy Manager)	Monitoring building energy consumption
Dimensions	165mm x 95mm x 52mm
Operating temperature range	0°C to 40°C
Enclosure protection	IP 20
Level of protection from electric shock	Double insulation
Case material V0 rating	Rated fire retardant
Supply Voltage	220-240V AC
Max power in watts	7W
Power Supply Frequency Hz	50-60 Hz
WiFi IEE 802.11 Frequency Band	EEE 802.11 BG 2.4 GHz
Type of Memory & Data Storage Capacity	Internal-4Gb storage greater than 2 years External-microSD card slot for downloading data
Power supply for display	12W Switching Power Supply: I/P 90-264VAC unterminated wire for spur connection. O/P USB Connection DC 5V. 82.5mm x 40mm x 29mm
Number of monitored channels	Up to 6: Max of 3 x Electricity via CTs & 3 x any pulse enabled meter
CT Current Transformer related measurements (16mm/24mm)	Kilowatt and kilowatt/hour kW and kW/h
Real-time, instantaneous Measurements	Energy units consumed £/h (gas, water, electricity, heat, cooling, solar power)
Continued Utility Measurements	Historical total energy consumed in currency and kW/h. Carbon CO2
WiFi Security	WiFi Protected Access (WPA) security protocol and certification program

IMPORTANT

Whilst NetThings takes all reasonably practical steps to design and manufacture its products to comply with the requirements of the Health and Safety at Work Act 1974, all products must be properly used and purchasers are reminded that their obligations under the Act are to ensure that the installation and operation of such products at a place of work should be safe and without risk to them. Do not place the product where it may be affected by dust, moisture, adverse temperature, radio interference or be subject to physical damage. Do not insert any objects into the Energy Manager or Display.

CARE AND MAINTENANCE
The NetThings Energy Manager or Display require no regular maintenance. Do not spray with water or any cleaning products, which may damage the surfaces or cause a risk of electric shock.

SERVICE AND REPAIR
This programmer is NOT user serviceable.
Please do not dismantle the unit. For alterations to the connected utilities please consult a suitably qualified electrician. In the unlikely event of a fault developing please refer to the SUPPORT section on our website. If this fails to resolve the problem please contact NetThings.

DECLARATION OF CONFORMITY This product conforms to: ETSI EN 301 489-1 V1.4.1 (2002-08) IEC 61643, 61326, 61010, 60529.
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